Education
SUPERHIGHWAY

Upgrading Broadband in Montana's K-12 Schools

August 2016

Our mission

Upgrade the Internet access in every public school classroom in America so that all students can take advantage of the promise of digital learning.

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Our funders

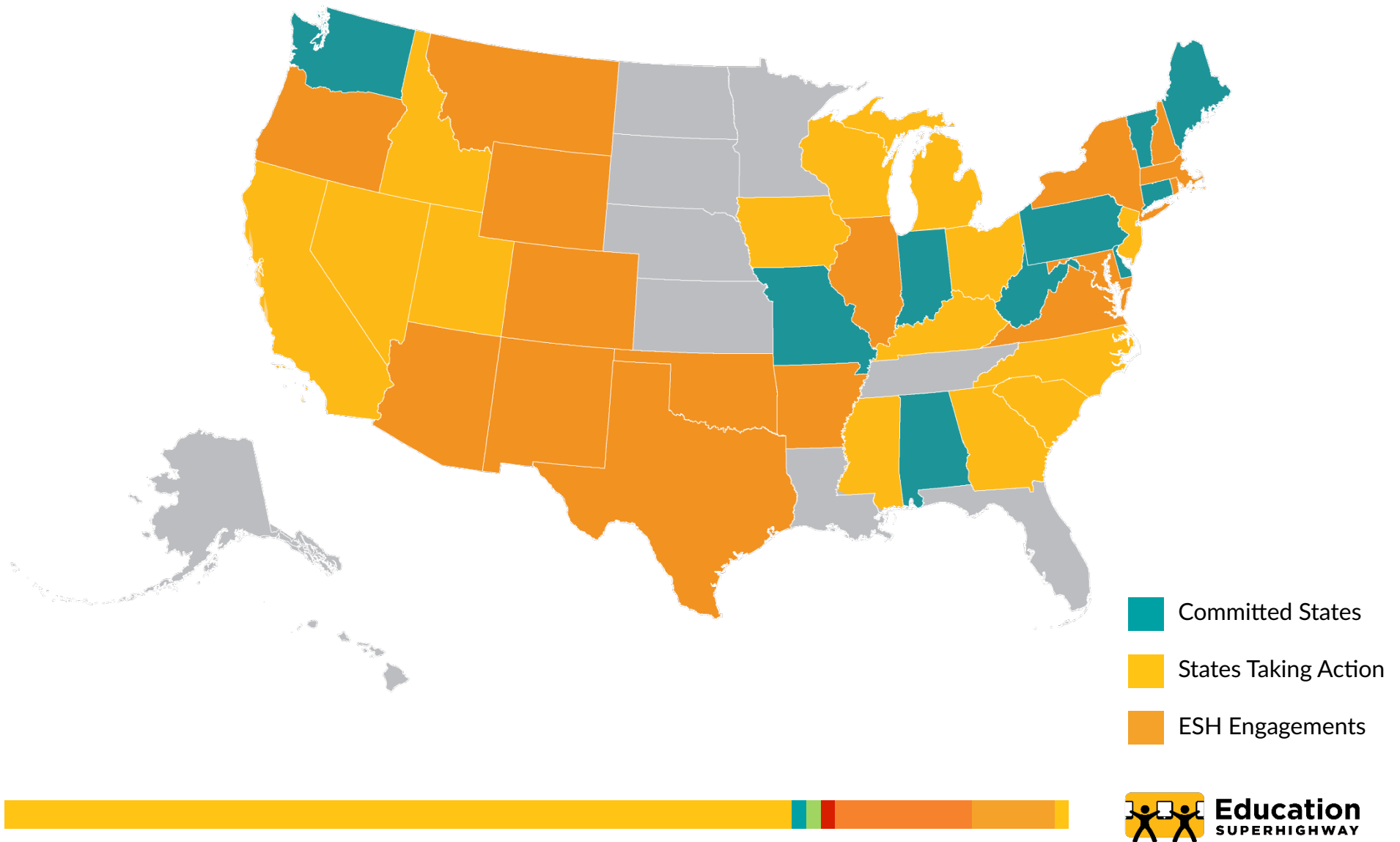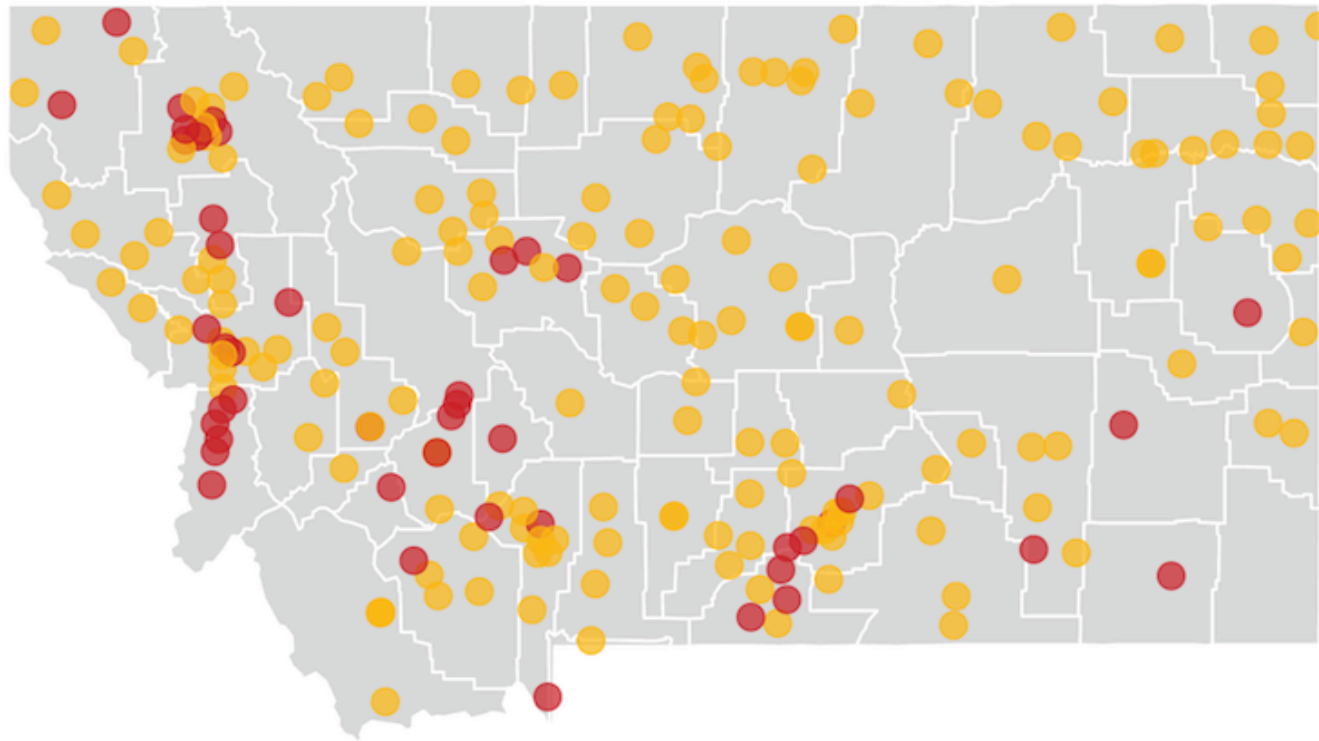|		
The Bill and Melinda Gates Foundation	Startup: Education	The Leona M. and Harry B. Helmsley Charitable Trust
Timothy and Michele Barakett Foundation	Draper Richards Kaplan Foundation	Devon and Pete Briger
The Learning Accelerator	Philip and Alicia Hammarskjold	The A.L. Mailman Foundation
Hank and Bonnie Miller Family	Leeds Family Foundation	Maverick Capital Foundation
Ford Foundation	Sappi Ideas that Matter	Strategic Grant Partners

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Our progress
State engagements

Committed States

States Taking Action

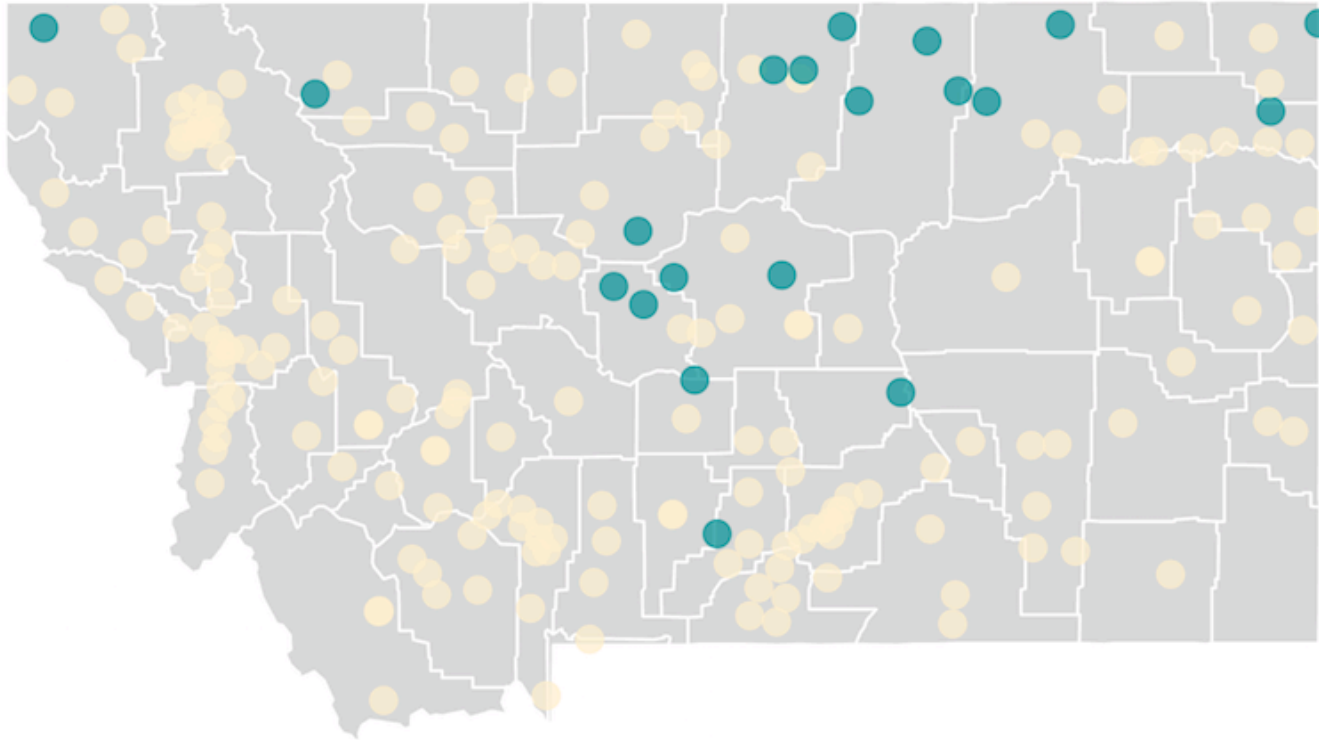ESH Engagements

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Districts Meeting 100 Kbps/student Bandwidth Goals

80% of districts receive at least 100 kbps per student – the minimum required for digital learning

Legend:
- Meets 100kbps/Student Goal
- Does Not Meet 100kbps/Student Goal
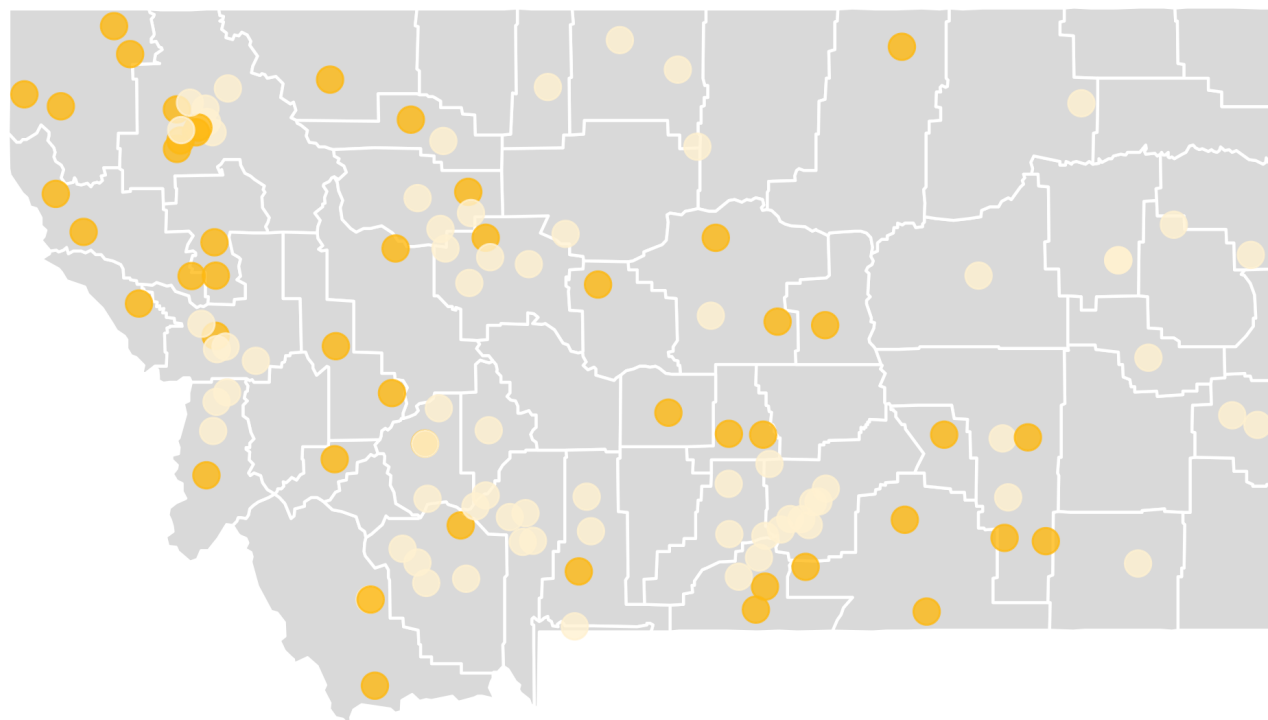
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Districts Meeting 1 Mbps/student Bandwidth Goals

But nearly all will need to upgrade in order to meet the 2018 standard of 1 Mbps/student - a 10x increase

● Meets 1Mbps/Student Goal
● Does Not Meet 1Mbps/Student Goal

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Over 100 Districts May Need Fiber Upgrades

135 schools and 25,000 students lack fiber access to the Internet

A 10% state match enables all to upgrade

And 43 would upgrade at no cost to the district

○ Upgrade at partial cost to district
● Upgrade at no cost to district

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One-time fiber funding opportunity expires in 2018

- **Additional 10% E-rate funding if state provides a matching fund**
- Fiber construction cap has been suspended on fiber construction costs
- More flexibility to pay non-discounted portion of fiber construction costs
- E-rate has created a limited time window to upgrade schools

A state matching fund of $7 million would activate $70 million in infrastructure upgrades from service providers, and close the K-12 fiber gap in Montana

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States are leveraging E-rate to connect more schools

In New Mexico, state match funding allowed numbers of districts to upgrade at no cost.

District	# of schools	Special Construction	E-Rate %	State Match	District Match
Bernalillo Public Schools	9	$2,500,000	90%	$125,000	$0
Bloomfield Schools	1	n/a	80%	n/a	$0
Central Consolidated Schools	11	$3,100,000	90%	$155,000	$0
Cobre Consolidated Schools	1	$675,000	90%	$33,750	$0
Deming Public Schools	1	$1,325,000	90%	$66,250	$0
Espanola Public Schools	6	n/a	90%	n/a	$0
Farmington Municipal Schools	8	$700,000	80%	$70,000	$0
Gadsden Independent Schools	1	$450,000	90%	$22,500	$0
Gallup-McKinley County Schools	4	$5,975,000	90%	$298,750	$0
Hondo Valley Public Schools	2	$115,350	90%	$5,768	$0
Jal Public Schools	3	n/a	80%	n/a	$0
Socorro Consolidated Schools	2	n/a	90%	n/a	$0
West Las Vegas Public Schools	2	n/a	90%	n/a	$0
TOTAL	**51**	**$14,840,350**		**$777,018**	**$0**

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Our district consulting program

Our consulting program are designed to help districts work with providers to upgrade

Understand and provide education for districts to get their buy-in towards upgrades

Research technology and provider options by engaging with the provider community

Champion districts towards upgrades based on research findings

Help districts release and manage high quality 470/RFPs and understand rules

Provide technical and implementation support as needed towards success

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Great progress in Montana in 2015

EducationSuperHighway supported 28 districts seeking procurements in the 2015-2016 cycle

EducationSuperHighway directly supported:

- 28 districts (and 104 schools) sought upgrade opportunities

- 47 service provider bids received

- 19 districts (and 88 schools) upgraded this year

- On average districts increased bandwidth by 15x

- 12,000+ more students now have access to fiber

- 23,000+ more students now meeting 100 Kbps/student goal

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Case Study: Darby School District, Montana

Fiber Special Construction

Helped school district leverage new E-rate funding options to build fiber to a community

- 320-student district in the remote Bitterroot Valley
- Recently closed a successful procurement for a new 18 mile fiber run –
  - 5 bidders
  - Lit service options
- Winning provider will build out fiber, **with the majority of construction costs reimbursed by E-rate program.**
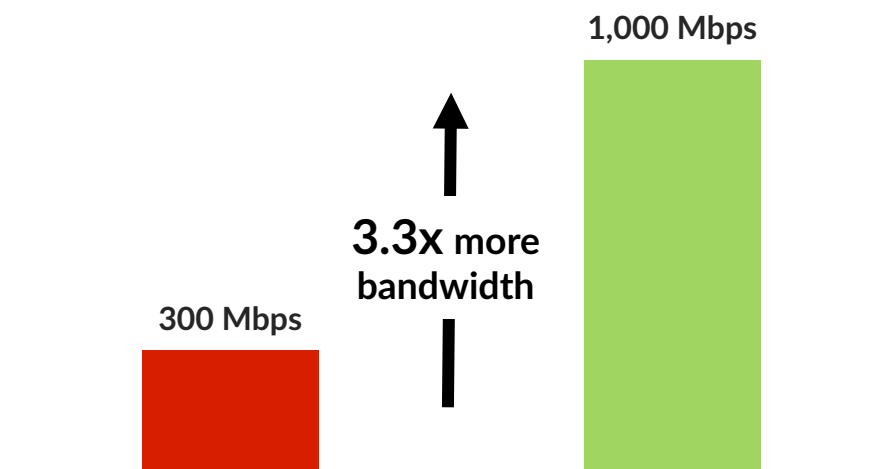
Total Mbps of Internet access

1,000 Mbps

33x more bandwidth

30 Mbps

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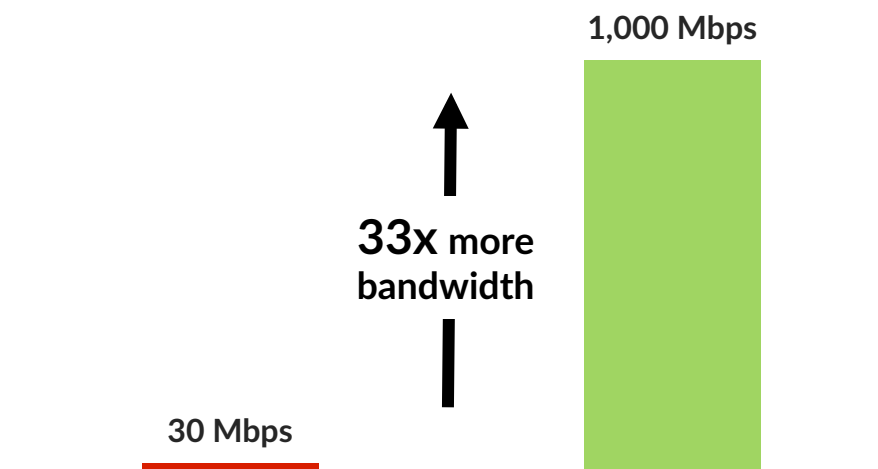
Case Study: Great Falls Public Schools, Montana

Bandwidth Upgrade

Helped district upgrade with existing provider to meet bandwidth goals

- 10,067 students (2nd largest district in the state)

- Was on a 300 Mbps lit fiber connection at $12 per Mbps, resulting in just 30 kbps/ student

- Upgraded mid-contract to 1 Gbps connection with existing provider; will receive 100 kbps/ per student after upgrade

Total Mbps of Internet access

1,000 Mbps

3.3x more bandwidth

300 Mbps

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Our progress in 2015-16

Success upgrading schools in Montana

Still more to come in 2016-17

165
schools not on fiber

2015

135
schools not on fiber

2016

18% decrease

76,441
Students do not meet 100 Kbps goal

2015

51,471
Students do not meet 100 Kbps goal

2016

33% decrease

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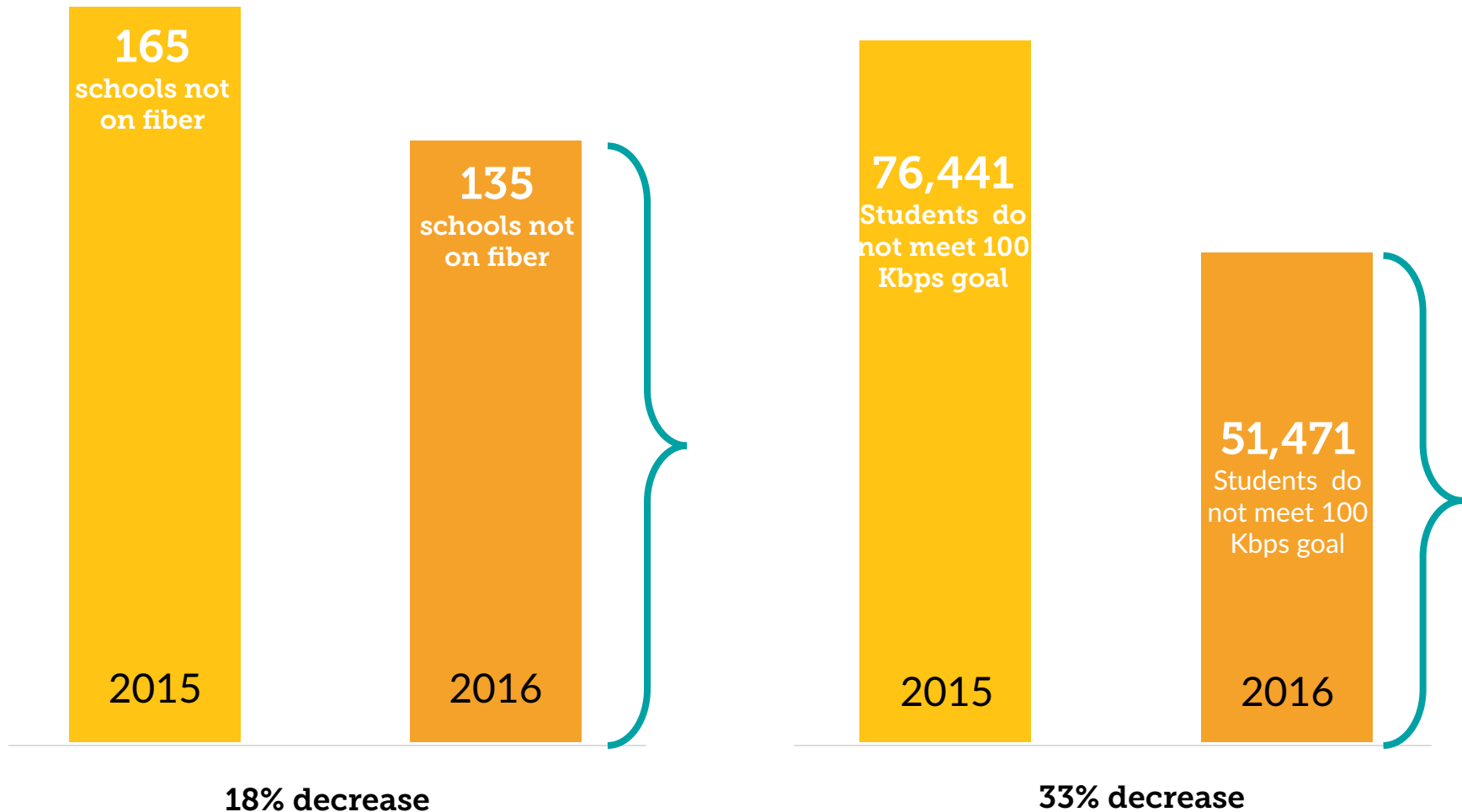
We've launched projects in another 12 districts 2016

West Glacier School District
Ennis School District
Laurel School District
Woodman School
West Valley School
Lockwood School District
King Colony Elem
Deerfield Elem
Swan River Elem
Ashland Elem
Bynum Elementary School District
Golden Ridge Elementary School District
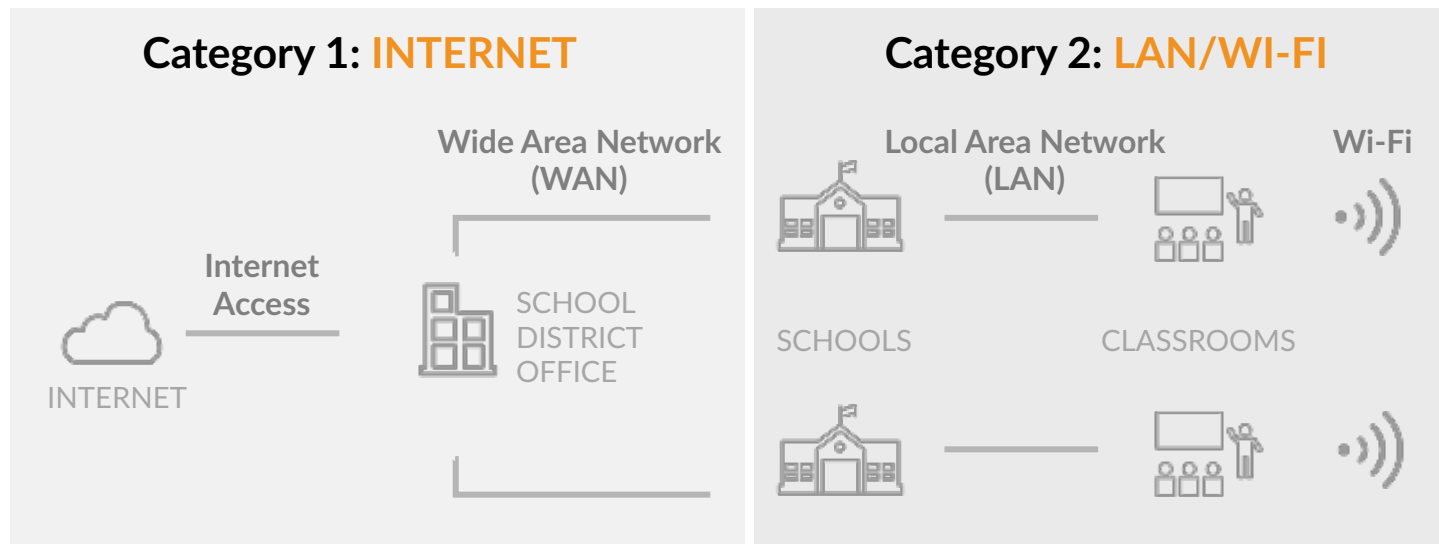
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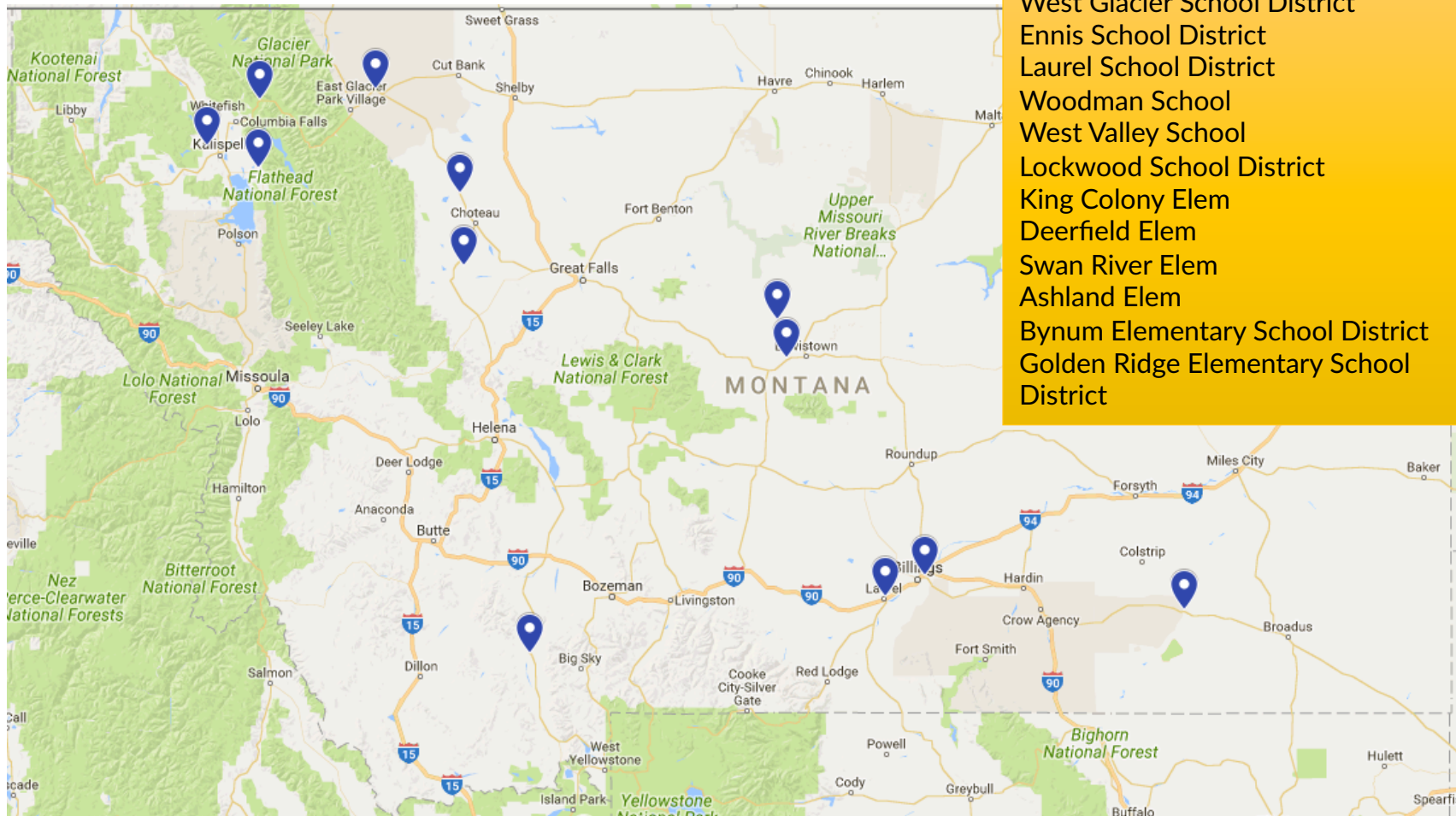
E-rate funds K-12 broadband connectivity

$3.9 BILLION ANNUALLY

Up to 90% discount on connectivity services
Operated by the Universal Service Administrative Company (USAC) under the FCC

Category 1: INTERNET

Wide Area Network (WAN)

Internet Access

INTERNET

SCHOOL DISTRICT OFFICE

Category 2: LAN/WI-FI

Local Area Network (LAN)

Wi-Fi

SCHOOLS

CLASSROOMS

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E-rate timeline

Summer	Fall	Winter	Spring	
Assess broadband needs	Bid for services (Form 470)	Select service providers	Apply for discounts on services (Form 471)	Receive services; Assess broadband needs

E-rate eligible services

Category 1 services

- Fiber (lit and dark)
- Wireless (e.g., microwave)
- Cable modem
- DSL
- Satellite service
- Broadband over power lines
- T-1, T-3
- Dial-up
- Voice services

Category 2 services

- Access points
- Antennas and cabling
- Caching
- Network switches
- Firewall services and components
- Switches
- Routers
- Racks
- UPS/battery back up
- Supporting software
- Managed services (e.g., Wi-Fi)
- Basic maintenance, repair, and installation

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